

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-31-18  
Relating to Certification of New Motor Vehicle Heavy-Duty Engines

HINO MOTORS, LTD.

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102, and 43103 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-3;

IT IS ORDERED AND RESOLVED: That the following Hino Motors, Ltd. 1987 model-year diesel engines have shown compliance with the transient test procedure and standards and are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating greater than 8500 pounds:

<u>Engine Family</u>	<u>Displacement Cubic Inches (Liters)</u>	<u>Exhaust Emission Control Systems (Special Features)</u>
HHM0038EAA7	234 (3.8)	Engine Modification (Diesel Injection-Direct) (Turbocharger)

Engine models and codes are listed on attachments.

The following are the certification emission values for these engine families:

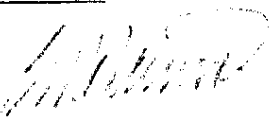
<u>Engine Family</u>	<u>Hydrocarbons gm/bhp-hr</u>	<u>Carbon Monoxide gm/bhp-hr</u>	<u>Nitrogen Oxides gm/bhp-hr</u>
HHM0038EAA7	0.6	1.7	4.5

BE IT FURTHER RESOLVED: That the Executive Officer has been provided all material required to demonstrate certification compliance with the Board's emission control system warranty regulations (Title 13, California Administrative Code, Section 2036).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order.

Executed at El Monte, California this 22nd day of September, 1986.

  
K. D. Drachand, Chief  
Mobile Source Division

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Manufacturer HINO MOTORS, LTD. Engine Family HHM0038EAA7  
 Evaporative Family                      Engine Type L-4, 4 Stroke Cycle, TC  
 Liters (CID) 3.839 (234)

ABBREVIATIONSIgnition System

CA-Centrifugal Advance  
 EEC-Electronic Engine Control  
 EI-Electronic Ignition  
 ESAC-Electronic Spark Advance  
       Control  
 VA-Vacuum Advance  
 VR-Vacuum Retard

Exhaust Emissions Control System

AIP-Air Injection-Pump  
 AIV-Air Injection-Valve  
 CL-Closed Loop  
 EGR-Exhaust Gas Recirculation  
 EM-Engine Modification  
 OC-Oxidation Catalyst System  
 SPL-Smoke Puff Limiter or  
       Throttle Delay  
 TOC-Trap Oxidizer, Continual  
 TOP-Trap Oxidizer, Periodical  
 TR-Thermal Reactor  
 TWC-Three-Way Catalyst System

Special Features

CCV-Combustion  
       Chamber Valve  
 CFI-Central Fuel  
       Injection  
 DID-Diesel  
       Injection-  
       Direct  
 DIP-Diesel  
       Injection-  
       Prechamber  
 EFI-Electronic  
       Fuel  
       Injection  
 IC-Intercooler  
       or aftercooler  
 MFI-Mechanical  
       Fuel  
       Injection  
 TC-Turbocharger

Fuel System

CFI, CL, DID, DIP, EFI, MFI  
 nV-nVenturi Carburetor

VEHICLE MODELS:

Line: Front x Mid.            Rear           

Drive: FWD            RWD x 4WD Full Time            4WD Part Time

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HEAVY-DUTY DIESEL ENGINES

Manufacturer HINO MOTORS, LTD. Engine Family HHM0038EAA7  
 Liter (CID) 3.839 (234) Eng. Type L-4, 4 Stroke Cycle, Turbocharged  
 Emission Control Sys. and (Special Features) Engine Modification (TC)(PID)

Engine Model	Fuel Injection Pump Mfr. Part Number	Injector Mfr. Part Number	Maximum Rated HP at RPM	Fuel Rate mm <sup>3</sup> /stroke (lbs/Hr)	Maximum Rated Torque at RPM	Fuel Rate mm <sup>3</sup> /stroke (lbs/Hr)
04C-TC	Diesel Kiki 22000-5520	Diesel Kiki 23600-1880	120@ 3,200	71 (49.5)	246@ 2,000	77 (33.5)

Date of Issue August 1, 1986 Revisions: